

<b>FORM PTO/SB/08A/B (10-01)</b> Substitute for PTO-1449A/B  <b>INFORMATION DISCLOSURE</b> <b>STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)	Attorney Docket Number	50679/DJB/C766
	Application Number	10/632,347
	Filing Date	August 1, 2003
	Applicant(s)	William R. McGrath
	Group Art Unit	2855
	Examiner Name	Not Yet Assigned

U.S. PATENT DOCUMENTS				
EXAMINER INITIALS	Cite No. <sup>1</sup>	DOCUMENT NUMBER Number - Kind Code <sup>2</sup> (If Known)	PUBLICATION DATE MM-DD-YYYY	NAME OF PATENTEE
BF		5,507,291	04-16-1996	Stirbl et al.
BD		5,606,971	03-04-1997	Sarvazyan

FOREIGN PATENT DOCUMENTS				
EXAMINER INITIALS	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (If Known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document

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Examiner Name	Michael C. Astorino

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BJ		CLARK et al., "Medical Instrumentation Application And Design", John Wiley & Sons, Inc., undated, Third Edition, Section 4.6 through 6.6, pp. 139-259, Cover page (1).
		GEDDES et al., "Principles Of Applied Biomedical Instrumentation", Wiley-Interscience Publication, Third Edition, undated, pp. 600-613, cover page (1).
		IEEE Standards Coordinating Committee 28, "IEEE Standard For Safety Levels With Respect To Human Exposure To Radio Frequency Electromagnetic Fields, 3kHz to 300 GHz", IEEE Std. C95.1, April 16, 1999, pp. 1-73, Cover pg. (1), Abstract (2 pgs), Introduction (6 pgs), Table of Contents (1 pg).
		BEHNIA et al., "Closed-Loop Feedback Control Of Phased-Array Microwave Heating Using Thermal Measurements From Magnetic Resonance Imaging", Concepts in Magnetic Resonance (Magnetic Resonance Engineering ), Vol. 15, No. 1, 2002, pp. 101-110.
		OSEPCHUK, J., "How Safe Are Microwaves And Solar Power From Space?", IEEE Microwave Magazine, December 2002, pp. 58-64.
		YAN et al., "Theoretical Analysis Of The Biological Thermal Effect Of Millimeter Waves In Layered-Dielectric-Slabs", International Journal of Infrared and Millimeter Waves, Vol. 24, No. 5, May 2003, pp. 763-772.

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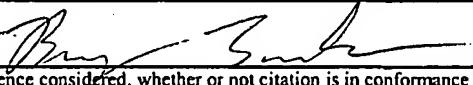
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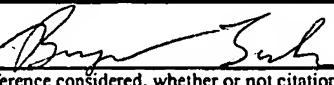
**OTHER DOCUMENTS**

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BJ		VIJAYALAXMI et al., "Genotoxic Potential Of 1.6 GHz Wireless Communication Signal: <i>In Vivo</i> Two-Year Bioassay", Radiation Research, Vol. 159, 2003, pp. 558-564.
		BIT-BABIK et al., "Estimation Of The SAR In The Human Head And Body Due To Radiofrequency Radiation Exposure From Handheld Mobile Phones With Hands-Free Accessories", Radiation Research, Vol. 159, 2003, pp. 550-557.
		THALAU et al., "Temperature Changes In Chicken Embryos Exposed To A Continuous-Wave 1.25 GHz Radiofrequency Electromagnetic Field", Radiation Research, Vol. 159, 2003, pp. 685-692.
		HIRATA et al., "Correlation Of Maximum Temperature Increase and Peak SAR In The Human Head Due to Handset Antennas", IEEE Transactions On Microwave Theory and Techniques, Vol. 51, No. 7, July 2003, pp. 1834-1841.
		LIN et al., "Wearable Sensor Patches For Physiological Monitoring", JPL Inventor's Report, NASA Case No. 0246 2065I, NASA Tech Brief Vol. 25, No. 2, pp. 1-3, cover pgs (2).
		PATTERSON, R. "Fundamentals Of Impedance Cardiography", IEEE Engineering In Medicine and Biology Magazine, March 1989, pp. 35-38.
		WANG et al., "Multiple Sources Of The Impedance Cardiogram Based On 3-D Finite Difference Human Thorax Models", IEEE Transactions on Biomedical Engineering, Vol. 42, No. 2, February 1995, pp. 141-148.
		PATTERSON et al., "Impedance Cardiography Using Band And Regional Electrodes In Supine, Sitting, And During Exercise", IEEE Transactions on Biomedical Engineering, Vol. 38, No. 5, May 1991, pp. 393-400
		JOSSINET, J., "The Impedivity Of Freshly Excised Human Breast Tissue", Physiol. Meas., Vol. 19, 1998, pp. 61-75.
		MOHAPATRA et al., "Blood Resistivity And Its Implications For The Calculation Of Cardiac Output By The Thoracic Electrical Impedance Technique", Intens. Care Med., Vol. 3, 1977, pp. 63-67.
		KING R., "Comments On "Biological Effects Of Radio-Frequency/Microwave Radiation"", IEEE Transactions on Microwave Theory and Techniques, Vol. 50, No. 8, August 2002, pp. 2032-2033.
		KING, R., "Electric Fields Induced In Cells In The Bodies Of Amateur Radio Operators By Their Transmitting Antennas", IEEE Transactions On Microwave Theory and Techniques, Vol. 48, No. 11, November 2000, pp. 2155-2158

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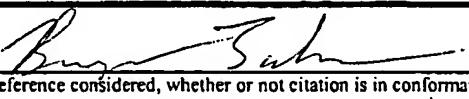
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BG		KING, R., "Electric Current And Electric Field Induced In The Human Body When Exposed To An Incident Electric Field Near The Resonant Frequency", IEEE Transactions on Microwave Theory And Techniques, Vol. 48, No. 9, September 2000, pp. 1537-1543.
		JOHNSON et al., "Nonionizing Electromagnetic Wave Effects In Biological Materials And Systems", Proceedings of the IEEE, Vol. 60, No. 6, June 1972, pp. 692-719.
		LOHMAN et al., "A Digital Signal Processor For Doppler Radar Sensing Of Vital Signs", 2001 Proceedings of the 23rd Annual EMBS International Conference, October 25-28, 2001, Istanbul, Turkey, pp. 3359-3362
		GUILLEN et al., "Design Of A Prototype For Dynamic Electrocardiography Monitoring Using GSM Technology: GSM-Holter", 2001 Proceedings of the 23rd Annual EMBS International Conference, October 25-28, 2001, Istanbul, Turkey, pp. 3956-3959
		MARBAN, E., "Cardiac Channelopathies", Insight Review Articles, undated, 6 pgs.
		BORIC-LUBECKE et al, "Wireless House Calls: Using Communications Technology For Health Care And Monitoring", IEEE Microwave Magazine, September 2002, pp. 43-48
		HOLDEN, A., "A Last Wave From The Dying Heart", Nature, Vol. 392, March 5, 1998, pp. 20-21.
		ABUBAKAR et al., "Imaging Of Biomedical Data Using A Multiplicative Regularized Contrast Source Inversion Method", IEEE Transactions on Microwave Theory and Techniques, Vol. 50, No. 7, July 2002, pp. 1761-1771.
		YU et al., "Can Millimeter Waves Generate Electroporation?", International Journal of Infrared and Millimeter Waves, Vol. 23, No. 8, August 2002, pp. 1261-1269.
		YU et al., "Discussion About The Ratio Method For Measuring Millimeter Wave Absorption By Biological Entities", International Journal of Infrared and Millimeter Waves, Vol. 23, No. 7, July 2002, pp. 997-1006
		MCGILL et al., "A Model Of The Muscle Action Potential For Describing The Leading Edge, Terminal Wave, And Slow Afterwave", IEEE Transactions on Biomedical Engineering, Vol. 48, No. 12, December 2001, pp. 1357-1365
		ADAIR et al., "Biological Effects Of Radio-Frequency/Microwave Radiation", IEEE Transactions on Microwave Theory and Techniques, Vol. 50, No. 3, March 2002, pp. 953-962

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BJ		EMILI et al., "Computation Of Electromagnetic Field Inside A Tissue At Mobile Communications Frequencies", IEEE Transactions on Microwave Theory and Techniques, Vol. 51, No. 1, January 2003, pp. 178-186
		LIN, J., "Noninvasive Microwave Measurement Of Respiration", Proceedings of the IEEE, October 1975, p. 1530.
		LEE et al., "Magnetic Gradiometer Based On A High-Transition Temperature Superconducting Quantum Interference Device For Improved Sensitivity Of A Biosensor", Applied Physics Letters, Vol. 81, No. 16, October 14, 2002, pp. 3094-3096.
		PEDERSEN et al., "An Investigation Of The Use Of Microwave Radiation For Pulmonary Diagnostics", IEEE Transactions on Biomedical Engineering, September 1976, pp. 410-412
		CHEN et al., "An X-Band Microwave Life-Detection System", IEEE Transactions on Biomedical Engineering, Vol. BME-33, No. 7, July 1986, pp. 697-701
		LIN et al., "Microwave Apexcardiography", IEEE Transactions on Microwave Theory and Techniques, Vol. MTT-27, No. 6, June 1979, pp. 618-620
		RHEE, et al., "An Ultra-Low Power, Self-Organizing Wireless Network And Its Applications To Non-Invasive Biomedical Instrumentation", IEEE/Sarnoff Symposium on Advances in Wired and Wireless Communications, March 13, 2002, pp. 64-67
		PRANCE, et al., "An Ultra-Low-Noise Electrical-Potential Probe For Human-Body Scanning", Meas. Sci. Technol., Vol. 11, 2000, pp. 291-297
		CLIPPINGDALE et al., "Ultrahigh Impedance Capacitively Coupled Heart Imaging Array", Rev. Sci. Instrum., Vol. 65, No. 1, January 1994, pp. 269-270
		STANLEY et al., "Pressure-Jump Relaxation Apparatus Using Bipolar-Pulse Conductivity Detection", Rev. Sci. Instrum., Vol. 65, No. 1, January 1994, pp. 199-203
		HARLAND et al., "Electric Potential Probes - New Directions In the Remote Sensing Of The Human Body", Meas. Sci. Technol., Vol. 13, 2002, pp. 163-169
		HARLAND et al., "Remote Detection of Human Electroencephalograms using Ultrahigh Input Impedance Electric Potential Sensors", Applied Physics Letters, Vol. 81, No. 17, October 21, 2002, pp. 3284-3286

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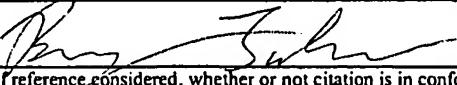
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B5		LUDWIG, H., "Technical Note: Heart- Or Respiration-Rate Calculator", Med. & Biol. Eng. & Comput., Vol. 15, 1977, pp. 700-702
		SPINELLI et al., "A Novel Fully Differential Biopotential Amplifier With DC Suppression", IEEE Transactions on Biomedical Engineering, Vol. 51, No. 8, August 2004, pp. 1444-1448
		LEBEDEVA, A., "The Use Of Millimeter Wavelength Electromagnetic Waves In Cardiology", Critical Reviews™ in Biomedical Engineering, Vol. 28, Nos. 1 and 2, 2000, pp. 339-347
		TAYLOR et al., "Precision Digital Instrument for Calculation Of Heart Rate and R-R Interval", IEEE Transactions On Biomedical Engineering, May 1975, pp. 255-257
		DROITCOUR et al, "21.1 0.25µm CMOS and BiCMOS Single-Chip Direct-Conversion Doppler Radars For Remote Sensing Of Vital Signs", ISSCC 2002, Session 21, TD: Sensors and Microsystems, February 6, 2002, 2 pgs.
		DROITCOUR et al., "Range Correlation Effect On ISM Band I/Q CMOS Radar For Non-Contact Vital Signs Sensing", IEEE MTT-S Digest, 2003, pp. 1945-1948
		DROITCOUR et al., "A Microwave Radio For Doppler Radar Sensing Of Vital Signs", undated, 4 pgs.
		HOBBIE R., "The Electrocardiogram As An Example Of Electrostatics", AJP, Vol. 41, June 1973, pp. 824-831.
		HOBBIE, R., "Improved Explanation Of The Electrocardiogram", Reprinted from American Journal of Physics, Vol. 52, 1984, pp. 704-705, Energetics, pp. 234-235
		LIEBE, H., "Mini-Review: Atmospheric EHF Window Transparencies Near 35, 90, 140 And 220 GHz", IEEE Transactions On Antennas And Propagation, Vol. AP-31, No. 1, January 1983, pp. 127-135.
		BYRD, R., "NPO-30697: Non-Contact Electrocardiograph Machine", Opportunity Assessment Prepared for NASA Jet Propulsion Laboratory, December 6, 2002, 40 pgs.
		MCNAMEE et al, "Short Communication: No Evidence for Genotoxic Effects from 24 H Exposure Of Human Leukocytes To 1.9 Radiofrequency Fields", Radiation Research, Vol. 159, 2003, pp. 693-697

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